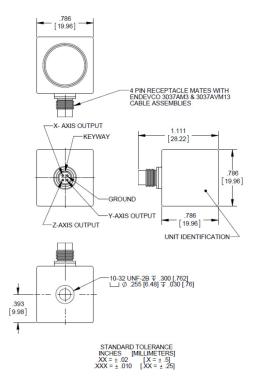


Isotron[®] accelerometer Model 45A

ASAXX CE



Model 45A is a cost effective general purpose triaxial lsotron accelerometer designed for use in a variety of applications. 45A is a 20 mm cube shaped lsotron accelerometer, featuring a single threaded 1/4-28 4 pin connector.

45A features an annular shear ceramic crystal which exhibits excellent output stability over time. The accelerometer incorporates an internal hybrid circuit with TEDS in a two-wire IEPE system which transmits its low impedance voltage output through the same cable that supplies the constant current power. Signal ground is connected to the outer case of the unit. Isolated mounting studs are available. Polarity inversion protection for the hybrid circuit is inherent in the circuit design.

45A is available in two sensitivities designated by a two digit suffix. The 45A18 has a sensitivity of 500 mV/g, while the 45A19 has a sensitivity of 1000 mV/g. The customer may select the mounting stud size included standard with the unit. The available stud sizes are 10-32, 1/4-28, M5 and M6. The stud size is designated following a dash after the model number.

This product is fully compliant to the European Union's Low Voltage Directive, 2006/95/EC and EMC Directive 2004/108/EC and is eligible to bear the CE Mark.

Key features

- General purpose triaxial Isotron[®] accelerometer
- Single, threaded 1/4-28 4 pin connector
- Wide frequency bandwidth
- High output available [500 mV/g and 1000 mV/g]
- IEEE P1451.4 TEDS capable

Our measurement product competencies:

Piezoelectric accelerometers | Piezoresistive accelerometers | Isotron accelerometers | Variable capacitance accelerometers | Pressure transducers | Acoustic sensors | Electronic instruments | Calibration systems | Shakers | Modal hammers | Cable assemblies



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Specifications

The following performance specifications conform to ISA-RP-37.2 and are typical values, referenced at +75°F (+24°C), 4 mA, and 100 Hz, unless otherwise noted. Calibration data, traceable to National Institute of Standards and Technology (NIST), is supplied.

Dynamic characteristics	Units	45A18	45A19			
Range	g	±10	±5			
Sensitivity	5					
±10%	mV/g	500	1000			
Frequency response	. 5					
Resonance frequency						
Typical	kHz	28				
Minimum	kHz	21				
Amplitude response	RTIZ	Σ1				
±5% y & z axis	Hz	0.5 to 6000				
±5% x axis	Hz	0.5 to 3000				
	ΠZ	U.5 to 3000				
Phase response <5°	11-	E to 1500				
-	Hz	5 to 1500				
Sensitivity deviation over temperature	<u> </u>	E. 1E				
-67°F to +257°F (-55°C to +125°C)	%	-5 to +15				
Transverse sensitivity		_				
Typical	%	≤5				
Maximum	%	7.5				
Amplitude linearity	%	<1				
Electrical characteristics						
Output polarity	Acceleration directed into base produces					
		positive out	put			
DC output bias voltage						
Room temperature +75°F (+24°C)	Vdc	+11.4 to +1	3.0			
-67°F to +257°F (-55°C to +125°C)	Vdc	+8.0 to +15.5				
Output impedance	Ω	<100				
Noise floor						
Broadband						
1Hz to 10 kHz	µg rms	50	40			
Spectral	pgillis	50	40			
1Hz		15	11			
10 Hz	µg/√Hz	4	3			
	µg/√Hz					
100 Hz	µg/VHz	1	1			
1000 Hz	µg/√Hz	0.5	0.4			
Grounding method		Signal ground con	nected to case			
Power requirements						
Supply voltage [1]	Vdc	+24 to +30				
Supply current	mA	+2 to +20				
	-	3				
Warm-up time [2]	S		DS2431X+U			
Digital communication (TEDS) device		DS2431X-				
Digital communication (TEDS) device		DS2431X-	.U			
Digital communication (TEDS) device		DS2431X+				
Digital communication (TEDS) device		DS2431X-				
Digital communication (TEDS) device Environmental characteristics Temperature range, operating [3] Humidity		DS2431X+	°C to +125°C)			
Digital communication (TEDS) device Environmental characteristics Temperature range, operating [3]		DS2431X+ -67°F to +257°F (-55	°C to +125°C)			
Digital communication (TEDS) device Environmental characteristics Temperature range, operating [3] Humidity		DS2431X+ -67°F to +257°F (-55 Hermeticall	°C to +125°C)			
Digital communication (TEDS) device Environmental characteristics Temperature range, operating [3] Humidity Vibration limit (sinusoidal motion) [4] Shock limit [5]	g	DS2431X- -67°F to +257°F (-55 Hermeticall 500	°C to +125°C)			
Digital communication (TEDS) device Environmental characteristics Temperature range, operating [3] Humidity Vibration limit (sinusoidal motion) [4] Shock limit [5] Base strain sensitivity at 250 µstrain Flectromagnetic	g g pk g/µstrain equiv q/100 qauss	DS2431X- -67°F to +257°F (-55 Hermeticall 500 5000 0.001 0.001	'C to +125°C) y sealed			
Digital communication (TEDS) device Environmental characteristics Temperature range, operating [3] Humidity Vibration limit (sinusoidal motion) [4] Shock limit [5] Base strain sensitivity at 250 µstrain Flectromagnetic	g g pk g/µstrain equiv q/100 qauss	DS2431X- -67°F to +257°F (-55 Hermeticall 500 5000 0.001 0.001	°C to +125°C)			
Digital communication (TEDS) device Environmental characteristics Temperature range, operating [3] Humidity Vibration limit (sinusoidal motion) [4] Shock limit [5] Base strain sensitivity at 250 µstrain Flectromagnetic	g g pk g/µstrain equiv q/100 qauss	DS2431X- -67°F to +257°F (-55 Hermeticall 500 5000 0.001 0.001	'C to +125°C) y sealed			
Digital communication (TEDS) device Environmental characteristics Temperature range, operating [3] Humidity Vibration limit (sinusoidal motion) [4] Shock limit [5] Base strain sensitivity at 250 µstrain Electromagnetic Physical characteristics	g g pk g/µstrain equiv q/100 qauss	DS2431X- -67°F to +257°F (-55 Hermeticall 500 5000 0.001 0.005	'C to +125°C) y sealed			
Digital communication (TEDS) device Environmental characteristics Temperature range, operating [3] Humidity Vibration limit [sinusoidal motion] [4] Shock limit [5] Base strain sensitivity at 250 µstrain Electromagnetic Physical characteristics Dimensions	g g pk g/µstrain equiv g/100 gauss	DS2431X- -67°F to +257°F (-55' Hermeticall 500 5000 0.001 0.005 See outline dr	'C to +125°C) y sealed			
Digital communication (TEDS) device Environmental characteristics Temperature range, operating [3] Humidity Vibration limit [sinusoidal motion] [4] Shock limit [5] Base strain sensitivity at 250 µstrain Electromagnetic Physical characteristics Dimensions Weight	g g pk g/µstrain equiv q/100 qauss	DS2431X+ -67°F to +257°F (-55 Hermeticall 500 0.001 0.005 See outline dr 40 (1.41)	'C to +125°C) y sealed awing			
Digital communication (TEDS) device Environmental characteristics Temperature range, operating [3] Humidity Vibration limit (sinusoidal motion) [4] Shock limit [5] Base strain sensitivity at 250 µstrain Electromagnetic Physical characteristics Dimensions Weight Case material	g g pk g/µstrain equiv g/100 gauss	DS2431X+ -67°F to +257°F (-55 Hermeticall 500 5000 0.001 0.005 See outline dr 40 (1.41) Titaniurr	'C to +125°C) y sealed awing			
Digital communication (TEDS) device Environmental characteristics Temperature range, operating [3] Humidity Vibration limit (sinusoidal motion) [4] Shock limit [5] Base strain sensitivity at 250 µstrain Electromagnetic Physical characteristics Dimensions Weight Case material Connector	g g pk g/µstrain equiv g/100 gauss	DS2431X- -67°F to +257°F (-55 Hermeticall 500 0.001 0.005 See outline dr 40 (1.41) Titanium 1/4-28 4 p	'C to +125°C) y sealed awing in			
Digital communication (TEDS) device Environmental characteristics Temperature range, operating [3] Humidity Vibration limit [sinusoidal motion) [4] Shock limit [5] Base strain sensitivity at 250 µstrain Electromagnetic Physical characteristics Dimensions Weight Case material Connector Mounting method	g g pk g/µstrain equiv g/100 gauss	DS2431X+ -67°F to +257°F (-55 Hermeticall 500 5000 0.001 0.005 See outline dr 40 (1.41) Titaniurr	'C to +125°C) y sealed awing in			
Digital communication (TEDS) device Environmental characteristics Temperature range, operating [3] Humidity Vibration limit [sinusoidal motion] [4] Shock limit [5] Base strain sensitivity at 250 µstrain Electromagnetic Physical characteristics Dimensions Weight Case material Connector Mounting method Mounting stud torque, recommended	g g pk g/µstrain equiv g/100 gauss gram (oz)	DS2431X+ -67°F to +257°F (-55 Hermeticall 500 0.001 0.005 See outline dr 40 (1.41) Titanium 1/4-28 4 p Threaded s	'C to +125°C) y sealed awing in			
Digital communication (TEDS) device Environmental characteristics Temperature range, operating [3] Humidity Vibration limit [sinusoidal motion] [4] Shock limit [5] Base strain sensitivity at 250 µstrain Electromagnetic Physical characteristics Dimensions Weight Case material Connector Mounting method Mounting stud torque, recommended 10-32 and M6 studs	g g pk g/µstrain equiv g/100 gauss gram (oz) lbf-in (Nm)	DS2431X+ -67°F to +257°F (-55 Hermeticall 500 0.001 0.005 See outline dr 40 (1.41) Titanium 1/4-28 4 p Threaded s 18 (2)	'C to +125°C) y sealed awing in			
Digital communication (TEDS) device Environmental characteristics Temperature range, operating [3] Humidity Vibration limit (sinusoidal motion) [4] Shock limit [5] Base strain sensitivity at 250 µstrain Electromagnetic Physical characteristics Dimensions Weight Case material Connector Mounting method Mounting stud torque, recommended 10–32 and M6 studs M5 stud	g g pk g/µstrain equiv g/100 gauss gram (oz) lbf-in (Nm) lbf-in (Nm)	DS2431X+ -67°F to +257°F (-55 Hermeticall 500 0.001 0.005 See outline dr 40 (1.41) Titanium 1/4-28 4 p Threaded s 18 (2) 13 (1.5]	'C to +125°C) y sealed awing in			
Digital communication (TEDS) device Environmental characteristics Temperature range, operating [3] Humidity Vibration limit (sinusoidal motion) [4] Shock limit [5] Base strain sensitivity at 250 µstrain Electromagnetic Physical characteristics Dimensions Weight Case material Connector Mounting method Mounting stud torque, recommended 10-32 and M6 studs	g g pk g/µstrain equiv g/100 gauss gram (oz) lbf-in (Nm)	DS2431X+ -67°F to +257°F (-55 Hermeticall 500 0.001 0.005 See outline dr 40 (1.41) Titanium 1/4-28 4 p Threaded s 18 (2)	'C to +125°C) y sealed awing in			
Digital communication (TEDS) device Environmental characteristics Temperature range, operating [3] Humidity Vibration limit [sinusoidal motion] [4] Shock limit [5] Base strain sensitivity at 250 µstrain Electromagnetic Physical characteristics Dimensions Weight Case material Connector Mounting method Mounting stud torque, recommended 10-32 and M6 studs M5 stud 1/4-28 stud	g g pk g/µstrain equiv g/100 gauss gram (oz) lbf-in (Nm) lbf-in (Nm)	DS2431X+ -67°F to +257°F (-55 Hermeticall 500 0.001 0.005 See outline dr 40 (1.41) Titanium 1/4-28 4 p Threaded s 18 (2) 13 (1.5]	'C to +125°C) y sealed awing in			
Digital communication (TEDS) device Environmental characteristics Temperature range, operating [3] Humidity Vibration limit (sinusoidal motion) [4] Shock limit [5] Base strain sensitivity at 250 µstrain Electromagnetic Physical characteristics Dimensions Weight Case material Connector Mounting method Mounting stud torque, recommended 10-32 and M6 studs M5 stud 1/4-28 stud Calibration data supplied	g g pk g/µstrain equiv g/100 gauss gram (oz) lbf-in (Nm) lbf-in (Nm) lbf-in (Nm)	DS2431X+ -67°F to +257°F (-55 Hermeticall 500 0.001 0.005 See outline dr 40 (1.41) Titanium 1/4-28 4 p Threaded s 18 (2) 13 (1.5]	'C to +125°C) y sealed awing in			
Digital communication (TEDS) device Environmental characteristics Temperature range, operating [3] Humidity Vibration limit (sinusoidal motion) [4] Shock limit [5] Base strain sensitivity at 250 µstrain Electromagnetic Physical characteristics Dimensions Weight Case material Connector Mounting stud torque, recommended 10-32 and M6 studs M5 stud 1/4-28 stud Calibration data supplied Sensitivity	g g pk g/µstrain equiv g/100 gauss gram (oz) lbf-in (Nm) lbf-in (Nm)	DS2431X+ -67°F to +257°F (-55 Hermeticall 500 0.001 0.005 See outline dr 40 (1.41) Titanium 1/4-28 4 p Threaded s 18 (2) 13 (1.5]	'C to +125°C) y sealed awing in			
Digital communication (TEDS) device Environmental characteristics Temperature range, operating [3] Humidity Vibration limit [sinusoidal motion) [4] Shock limit [5] Base strain sensitivity at 250 µstrain Electromagnetic Physical characteristics Dimensions Weight Case material Connector Mounting method Mounting stud torque, recommended 10-32 and M6 studs M5 stud 1/4-28 stud Calibration data supplied Sensitivity Frequency response	g g pk g/µstrain equiv g/100 gauss gram (oz) lbf-in (Nm) lbf-in (Nm) lbf-in (Nm)	DS2431X+ -67°F to +257°F [-55 Hermeticall 500 0.001 0.005 See outline dr 40 (1.41) Titanium 1/4-28 4 p Threaded s 18 (2) 13 (1.5) 30 (3.5)	'C to +125°C) y sealed awing in itud			
Digital communication (TEDS) device Environmental characteristics Temperature range, operating [3] Humidity Vibration limit (sinusoidal motion) [4] Shock limit [5] Base strain sensitivity at 250 µstrain Electromagnetic Physical characteristics Dimensions Weight Case material Connector Mounting stud torque, recommended 10-32 and M6 studs M5 stud 1/4-28 stud Calibration data supplied Sensitivity	g g pk g/µstrain equiv g/100 gauss gram (oz) lbf-in (Nm) lbf-in (Nm) lbf-in (Nm) mV/g %	DS2431X+ -67°F to +257°F (-55 Hermeticall 500 0.001 0.005 See outline dr 40 (1.41) Titanium 1/4-28 4 p Threaded s 18 (2) 13 (1.5) 30 (3.5)	'C to +125°C) y sealed awing in tud			
Digital communication (TEDS) device Environmental characteristics Temperature range, operating [3] Humidity Vibration limit [sinusoidal motion] [4] Shock limit [5] Base strain sensitivity at 250 µstrain Electromagnetic Physical characteristics Dimensions Weight Case material Connector Mounting method Mounting stud torque, recommended 10-32 and M6 studs M5 stud 1/4-28 stud 1/4-28 stud Calibration data supplied Sensitivity Frequency response Amplitude response	g g pk g/µstrain equiv g/100 gauss gram (oz) lbf-in (Nm) lbf-in (Nm) lbf-in (Nm) mV/g %	DS2431X+ -67°F to +257°F [-55 Hermeticall 500 0.001 0.005 See outline dr 40 (1.41) Titanium 1/4-28 4 p Threaded s 18 (2) 13 (1.5) 30 (3.5)	'C to +125°C) y sealed awing in tud			
Digital communication (TEDS) device Environmental characteristics Temperature range, operating [3] Humidity Vibration limit [sinusoidal motion) [4] Shock limit [5] Base strain sensitivity at 250 µstrain Electromagnetic Physical characteristics Dimensions Weight Case material Connector Mounting method Mounting stud torque, recommended 10-32 and M6 studs M5 stud 1/4-28 stud Calibration data supplied Sensitivity Frequency response	g g pk g/µstrain equiv g/100 gauss gram (oz) lbf-in (Nm) lbf-in (Nm) lbf-in (Nm) mV/g %	DS2431X+ -67°F to +257°F (-55 Hermeticall 500 0.001 0.005 See outline dr 40 (1.41) Titanium 1/4-28 4 p Threaded s 18 (2) 13 (1.5) 30 (3.5)	'C to +125°C) y sealed awing in tud			



Isotron[®] accelerometer Model 45A

Model number definition

45A XX -YYY	Mounting stud option No dash number = No stud included - 1032 = 10-32 stud - 2528 = 1/4-28 stud - M5 = M5 stud - M6 = M6 stud
	Denotes nominal sensitivity: 18 = 500 mV/g 19 = 1000 mV/g
	Basic model number

Accessories

Product	Description	45AXX	45AXX-1032	45AXX-2528	45AXX-M5	45AXX-M6
C-003-CA-005-ZZZZ [6]	Cable assembly 4 pin to 3 BNC	Optional	Optional	Optional	Optional	Optional
3027AM3-ZZZ [6]	Cable assembly 4 pin to 3 BNC	Optional	Optional	Optional	Optional	Optional
3027AVM13-ZZZ	Cable assembly 4 pin to 4 pin	Optional	Optional	Optional	Optional	Optional
42676-1	Mounting stud 10-32 to 10-32	Optional	Included	Optional	Optional	Optional
42676-2	Mounting stud 10-32 to 1/4-28	Optional	Optional	Included	Optional	Optional
42676-4	Mounting stud 10-32 to M5	Optional	Optional	Optional	Included	Optional
42676-3	Mounting stud 10-32 to M6	Optional	Optional	Optional	Optional	Included
42673-1	Isolated mounting stud 10-32 to 10-32	Optional	Optional	Optional	Optional	Optional
42673-2	Isolated mounting stud 10-32 to 1/4-28	Optional	Optional	Optional	Optional	Optional
42673-3	Isolated mounting stud 10-32 to M6	Optional	Optional	Optional	Optional	Optional
42673-4	Isolated mounting stud 10-32 to M5	Optional	Optional	Optional	Optional	Optional
42675-1	Isolated adhesive mounting adapter	Optional	Optional	Optional	Optional	Optional

Notes

- 1. Applications requiring a supply voltage of 20V, the full scale output voltage will be ±5V (at room temperature). Applications requiring a supply voltage of 18V, the full scale output voltage will be ±3V (at room temperature).
- 2. DC bias within 10% of final value.
- 3. TEDS device operational temperature range is -40°F to +185°F (-40°C to +85°C). TEDS device will survive full operational range of accelerometer.
- 4. Destructive limit.
- 5. Destructive limit. Shock is a one-time event. Shock pulses of short duration may excite transducer resonance. Shock level above the sinusoidal vibration limit may produce temporary zero shift that will result in erroneous velocity or displacement data after integration.
- 6. ZZZ or ZZZZ designates cable assembly length in inches.
- Maintain high levels of precision and accuracy using Endevco's factory calibration services. Call Endevco's inside sales force at +1 (866) 363-3826 for recommended intervals, pricing and turn-around time for these service as well as quotations for other products.



Continued product improvement necessitates that Endevco reserve the right to modify thesespecifications without notice. Endevco maintains a program of con-stant surveillance over all products to ensure a high level of reliability. This program includes attention to reliability factors during product design, the support of stringent Quality Control requirements, and compulsory corrective action procedures. These measures, together with conservative specifications have made the name Endevco synonymous with reliability.

Contact

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